

WEST Search History

DATE: Wednesday, June 09, 2004

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		<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L29	6493571	3
<input type="checkbox"/>	L28	1205760	9
<input type="checkbox"/>	L27	EP1205760	0
		<i>DB=PGPB,USPT,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L26	L25 and L22	20
<input type="checkbox"/>	L25	L24 or L23	12747
<input type="checkbox"/>	L24	(600/407 600/408 600/409 600/410 600/411 600/412 600/413 600/414 600/415 600/416 600/417 600/418 600/419 600/420 600/421 600/422 600/423 600/424 600/425 600/426 600/427 600/428 600/429 600/430 600/431 600/432 600/433 600/434 600/435).ccls.	6667
<input type="checkbox"/>	L23	(324/300 324/301 324/302 324/303 324/304 324/305 324/306 324/307 324/308 324/309 324/310 324/311 324/312 324/313 324/314 324/315 324/316 324/317 324/318 324/319 324/320 324/321 324/322).ccls.	7088
<input type="checkbox"/>	L22	L21 and ((complet\$5 or entir\$6 or total\$3 or finish\$5 or whole) with (encod\$4 or gradient))	69
<input type="checkbox"/>	L21	L20 and ((stop\$4 or halt\$4 or mov\$4 or brought or bring) with (table or platform or bed or gantry or support or stretcher or carrier or cradle))	71
<input type="checkbox"/>	L20	L19 and (table or platform or bed or gantry or support or stretcher or carrier or cradle)	88
		<i>DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L19	L17 and ((optim\$9 or ideal\$5 or best) with (imag\$6))	100
<input type="checkbox"/>	L18	L17 and ((optim\$9 or ideal\$5 or best) with (imag\$6))	0
<input type="checkbox"/>	L17	L16 and (boundar\$6 or artifact\$3 or artefact\$3 or ghost\$5 or blur\$6 or alias\$6 or slab or edg\$4)	115
<input type="checkbox"/>	L16	L14 and ("set" or group\$5 or plurality or sub-set or subset or "sub set")	122
<input type="checkbox"/>	L15	L14 and ("set" or group or plurality or sub-set or subset or "sub set")	122
<input type="checkbox"/>	L14	L13 and (kspace or k-space or "k space" or "kx" or "ky" or "kz" or raw or ((image or frequency) with space))	122
<input type="checkbox"/>	L13	L12 and (optim\$9 or ideal\$5 or best)	142
<input type="checkbox"/>	L12	L11 and ((complet\$5 or entir\$6 or total\$3 or finish\$5 or whole) with (imag\$6))	168
<input type="checkbox"/>	L11	L10 and ((complet\$5 or entir\$6 or total\$3 or finish\$5 or whole) with ((field of view) or field-of-view or fov))	173
<input type="checkbox"/>	L10	L9 and (complet\$5 or entir\$6 or total\$3 or finish\$5 or whole)	614
<input type="checkbox"/>	L9	L8 and ((imag\$6) with ((field of view) or field-of-view or fov))	648

<input type="checkbox"/>	L8	L7 and (comput\$6 or proces\$9 or procces\$9 or program\$8)	973
<input type="checkbox"/>	L7	L6 and ((imag\$6) with (scan\$7 or apparatus or device))	973
<input type="checkbox"/>	L6	L5 and (comput\$6 or proces\$9 or procces49 or program\$8)	1091
<input type="checkbox"/>	L5	L4 and (scan\$7 or apparatus or device)	1125
<input type="checkbox"/>	L4	L3 and (direction\$3 or axes or axis or encod\$6 or increment\$5 or step\$8)	1166
<input type="checkbox"/>	L3	L2 and (imag\$6)	1189
<input type="checkbox"/>	L2	L1 and (gradient)	1237
<input type="checkbox"/>	L1	((field of view) or field-of-view or fov)	5755

END OF SEARCH HISTORY

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Search Results - Record(s) 1 through 9 of 9 returned.

☐ 1. Document ID: US 1205760 A

Using default format because multiple data bases are involved.

L28: Entry 1 of 9

File: USPT

Nov 21, 1916

US-PAT-NO: 1205760

DOCUMENT-IDENTIFIER: US 1205760 A

TITLE: TEXT NOT AVAILABLE

DATE-ISSUED: November 21, 1916

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Name not available				

US-CL-CURRENT: 279/93

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	NUMC	Draw D
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☐ 2. Document ID: EP 1205760 A2

L28: Entry 2 of 9

File: EPAB

May 15, 2002

PUB-NO: EP001205760A2

DOCUMENT-IDENTIFIER: EP 1205760 A2

TITLE: MRI method and apparatus for imaging a field of view which is larger than a homogeneous magnetic field region

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	NUMC	Draw D
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☐ 3. Document ID: US 6445181 B1, EP 1205760 A2

L28: Entry 3 of 9

File: DWPI

Sep 3, 2002

DERWENT-ACC-NO: 2002-510654

DERWENT-WEEK: 200260

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TITLE: Magnetic resonance imaging apparatus for X-ray angiography, has receiver coil which is moved along with table for detecting MRI signals

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMC	Draw D
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☐ 4. Document ID: WO 9723719 A1, ES 2166003 T3, AU 9671140 A, US 5685141 A, EP 870104 A1, CN 1205760 A, TW 357231 A, JP 2000502418 W, IL 124851 A, KR 99076772 A, RU 2169852 C2, EP 870104 B1, DE 69617735 E

L28: Entry 4 of 9

File: DWPI

Jul 3, 1997

DERWENT-ACC-NO: 1997-351132

DERWENT-WEEK: 200233

COPYRIGHT 2004 DERWENT INFORMATION LTD

TITLE: Method for locking nozzle position in hydraulic system of jet engine - includes engaging synchronisation cable with conical brake locking mechanism, and preventing rotation of synchronisation cable during hydraulic failure

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMC	Draw D
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☐ 5. Document ID: DE 3626239 A, SE 8701695 A, AT 8700240 A, IT 1205760 B, SE 466721 B, DE 3626239 C2

L28: Entry 5 of 9

File: DWPI

Feb 4, 1988

DERWENT-ACC-NO: 1988-037298

DERWENT-WEEK: 199601

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TITLE: Strip block connector for joining wires together - is made from sheet metal stamping having interlocking ends to form hollow member when folded

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMC	Draw D
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☐ 6. Document ID: BE 888995 A, AT 8102410 A, AT 8102414 A, BR 8103353 A, CA 1167616 A, CA 1178761 A, CA 1204908 A, CA 1205760 A, CH 656091 A, CH 668742 A, DE 3121524 A, DE 3121525 A, DE 3121525 C, DK 165824 B, DK 8102321 A, DK 9000216 A, FI 8101617 A, FI 8701442 A, FR 2483312 A, FR 2483315 A, GB 2076734 A, GB 2076734 B, GB 2092943 A, GB 2092943 B, GB 2137553 A, GB 2137553 B, IT 1144570 B, JP 57018222 A, JP 57034925 A, JP 89024045 B, JP 91078248 B, NL 8102556 A, NL 8102600 A, NO 8101759 A, PT 74032 A, SE 451309 B, SE 8004003 A, SE 8008651 A, SE 8103301 A, SE 8103302 A, US 4405546 A, US 4416927 A, US 4462950 A, US 4468187 A, US 4569866 A, US 4580968 A, US 4631163 A, US 4929168 A, ZA 8103417 A, ZA 8103572 A

L28: Entry 6 of 9

File: DWPI

Nov 27, 1981

DERWENT-ACC-NO: 1981-91131D

DERWENT-WEEK: 198150

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TITLE: Monoaxial orientation of tubular PET parisons - by tensile drawdown through coaxial clamps near the glass transition temp.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KMC	Draw. De
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☐ 7. Document ID: EP 18546 A, NO 8001171 A, DK 8001745 A, JP 55145646 A, FI 8001325 A, PT 71129 A, CS 8002842 A, DD 151446 A, AT 7903089 A, ZA 8002523 A, AT 7905851 A, AT 7905852 A, CA 1148535 A, EP 18546 B, DE 3065012 G, IL 59902 A, HU 28807 T, SU 1205760 A, US 4708825 A, JP 89003182 B

L28: Entry 7 of 9

File: DWPI

Nov 12, 1980

DERWENT-ACC-NO: 1980-82960C

DERWENT-WEEK: 200378

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TITLE: Phenyl glycyI chloride hydrochloride prepn. - by reacting N-substd. phenyl glycine with sulphur- or phosphorus-contg. acid chloride and then hydrogen

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KMC	Draw. De
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☐ 8. Document ID: US 2439071 A

L28: Entry 8 of 9

File: USOC

Apr 6, 1948

US-PAT-NO: 2439071

DOCUMENT-IDENTIFIER: US 2439071 A

TITLE: Detachable handle for knives, hatchets, etc.

DATE-ISSUED: April 6, 1948

INVENTOR-NAME: BASHAM LAWRENCE H

US-CL-CURRENT: 279/77; 30/308.3, 30/337, 30/342

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KMC	Draw. De
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☐ 9. Document ID: US 1205760 A

L28: Entry 9 of 9

File: USOC

Nov 21, 1916

US-PAT-NO: 1205760

DOCUMENT-IDENTIFIER: US 1205760 A

TITLE: OCR SCANNED DOCUMENT

DATE-ISSUED: November 21, 1916

INVENTOR-NAME: Name not available

US-CL-CURRENT: 279/93

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWC	Draw D
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Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
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Term	Documents
"1205760"	9
1205760S	0
"1205760".PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	9
(1205760).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	9

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Search Results - Record(s) 1 through 20 of 20 returned.

☐ 1. Document ID: US 20040051529 A1

Using default format because multiple data bases are involved.

L26: Entry 1 of 20

File: PGPB

Mar 18, 2004

PGPUB-DOCUMENT-NUMBER: 20040051529

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040051529 A1

TITLE: Method and system for extended volume imaging using MRI with parallel reception

PUBLICATION-DATE: March 18, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Zhu, Yudong	Clifton Park	NY	US	
Dumoulin, Charles Lucian	Ballston Lake	NY	US	

US-CL-CURRENT: 324/318; 324/307, 324/309

Full	Title	Edison	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw D
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☐ 2. Document ID: US 20030216637 A1

L26: Entry 2 of 20

File: PGPB

Nov 20, 2003

PGPUB-DOCUMENT-NUMBER: 20030216637

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030216637 A1

TITLE: Whole body MRI scanning with moving table and interactive control

PUBLICATION-DATE: November 20, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ho, Vincent B.	North Bethesda	MD	US	
Foo, Thomas K.F.	Potomac	MD	US	

US-CL-CURRENT: 600/415; 600/420

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw D
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☐ 3. Document ID: US 20030214295 A1

L26: Entry 3 of 20

File: PGPB

Nov 20, 2003

PGPUB-DOCUMENT-NUMBER: 20030214295

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030214295 A1

TITLE: Gradient non-linearity compensation in moving table MRI

PUBLICATION-DATE: November 20, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Polzin, Jason A.	Lake Mills	WI	US	
Riederer, <u>Stephen</u> J.	Rochester	MN	US	
Kruger, David G.	Nelson	WI	US	

US-CL-CURRENT: 324/309; 324/307, 324/318

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw D
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☐ 4. Document ID: US 20030135111 A1

L26: Entry 4 of 20

File: PGPB

Jul 17, 2003

PGPUB-DOCUMENT-NUMBER: 20030135111

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030135111 A1

TITLE: Method and apparatus for magnetic resonance arteriography using contrast agents

PUBLICATION-DATE: July 17, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Meaney, James F.M.	Leeds	MI	GB	
Prince, Martin R.	Ann Arbor		US	

US-CL-CURRENT: 600/422

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw D
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☐ 5. Document ID: US 20030100825 A1

L26: Entry 5 of 20

File: PGPB

May 29, 2003

PGPUB-DOCUMENT-NUMBER: 20030100825
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030100825 A1

TITLE: METHOD AND SYSTEM FOR EXTENDED VOLUME IMAGING USING MRI

PUBLICATION-DATE: May 29, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Demoulin, Charles Lucian	Ballston Lake	NY	US	
Zhu, Yudong	Clifton Park	NY	US	

US-CL-CURRENT: 600/410

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. Des
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☐ 6. Document ID: US 20030060698 A1

L26: Entry 6 of 20

File: PGPB

Mar 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030060698
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030060698 A1

TITLE: Magnetic resonance angiography using floating table projection imaging

PUBLICATION-DATE: March 27, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Mistretta, Charles A.	Madison	WI	US	

US-CL-CURRENT: 600/410

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. Des
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☐ 7. Document ID: US 20030011369 A1

L26: Entry 7 of 20

File: PGPB

Jan 16, 2003

PGPUB-DOCUMENT-NUMBER: 20030011369
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030011369 A1

TITLE: Moving table MRI with frequency-encoding in the z-direction

PUBLICATION-DATE: January 16, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Brittain, Jean H.	Palo Alto	CA	US	
Pauly, John M.	Redwood City	CA	US	

US-CL-CURRENT: 324/309; 324/307, 324/318

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	Keywords	Drawings
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☐ 8. Document ID: US 20020177770 A1

L26: Entry 8 of 20

File: PGPB

Nov 28, 2002

PGPUB-DOCUMENT-NUMBER: 20020177770
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020177770 A1

TITLE: Assessing the condition of a joint and assessing cartilage loss

PUBLICATION-DATE: November 28, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Lang, Philipp	Lexington	MA	US	
Steines, Daniel	Palo Alto	CA	US	

US-CL-CURRENT: 600/410

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	Keywords	Drawings
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☐ 9. Document ID: US 20020173715 A1

L26: Entry 9 of 20

File: PGPB

Nov 21, 2002

PGPUB-DOCUMENT-NUMBER: 20020173715
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020173715 A1

TITLE: Method for acquiring MRI data from a large field of view using continuous table motion

PUBLICATION-DATE: November 21, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Kruger, David G.	Nelson	WI	US	
Riederer, <u>Stephen J.</u>	Rochester	MN	US	

US-CL-CURRENT: 600/410

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw De
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☐ 10. Document ID: US 20020143247 A1

L26: Entry 10 of 20

File: PGPB

Oct 3, 2002

PGPUB-DOCUMENT-NUMBER: 20020143247

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020143247 A1

TITLE: Method and apparatus of acquiring large FOV images without slab-boundary artifacts

PUBLICATION-DATE: October 3, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Brittain, Jean Helen	Pewaukee	WI	US	
Pauly, John Mark	Redwood City	CA	US	

US-CL-CURRENT: 600/410

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw De
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☐ 11. Document ID: US 20020140423 A1

L26: Entry 11 of 20

File: PGPB

Oct 3, 2002

PGPUB-DOCUMENT-NUMBER: 20020140423

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020140423 A1

TITLE: Moving table MRI with frequency-encoding in the z-direction

PUBLICATION-DATE: October 3, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Brittain, Jean Helen	Menlo Park	CA	US	

US-CL-CURRENT: 324/301; 324/309

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw De
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☐ 12. Document ID: US 20020068865 A1

L26: Entry 12 of 20

File: PGPB

Jun 6, 2002

PGPUB-DOCUMENT-NUMBER: 20020068865

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020068865 A1

TITLE: Method and apparatus for magnetic resonance arteriography using contrast agents

PUBLICATION-DATE: June 6, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Meaney, James F.M.	Leeds	MI	GB	
Prince, Martin R.	Ann Arbor		US	

US-CL-CURRENT: 600/415; 600/420

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KUMC	Drawings
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☐ 13. Document ID: US 6707300 B2

L26: Entry 13 of 20

File: USPT

Mar 16, 2004

US-PAT-NO: 6707300

DOCUMENT-IDENTIFIER: US 6707300 B2

TITLE: Gradient non-linearity compensation in moving table MRI

DATE-ISSUED: March 16, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Polzin; Jason A.	Lake Mills	WI		
Riederer; <u>Stephen</u> J.	Rochester	MN		
Kruger; David G.	Nelson	WI		

US-CL-CURRENT: 324/309; 324/307

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KUMC	Drawings
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☐ 14. Document ID: US 6671536 B2

L26: Entry 14 of 20

File: USPT

Dec 30, 2003

US-PAT-NO: 6671536

DOCUMENT-IDENTIFIER: US 6671536 B2

**** See image for Certificate of Correction ****TITLE: Magnetic resonance angiography using floating table projection imaging

DATE-ISSUED: December 30, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Mistretta; Charles A.	Madison	WI		

US-CL-CURRENT: 600/410; 128/898, 128/922, 324/306, 324/307, 324/309, 382/128,
382/130, 382/276, 382/280, 600/419, 600/420

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWC	Draw D
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☐ 15. Document ID: US 6584337 B2

L26: Entry 15 of 20

File: USPT

Jun 24, 2003

US-PAT-NO: 6584337

DOCUMENT-IDENTIFIER: US 6584337 B2

TITLE: Method and system for extended volume imaging using MRI

DATE-ISSUED: June 24, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Dumoulin; Charles Lucian	Ballston Lake	NY		
Zhu; Yudong	Clifton Park	NY		

US-CL-CURRENT: 600/410; 324/309, 600/415

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWC	Draw D
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☐ 16. Document ID: US 6564085 B2

L26: Entry 16 of 20

File: USPT

May 13, 2003

US-PAT-NO: 6564085

DOCUMENT-IDENTIFIER: US 6564085 B2

TITLE: Method and apparatus for magnetic resonance arteriography using contrast agents

DATE-ISSUED: May 13, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Meaney; James F.M.	Leeds LS29NS			GB
Prince; Martin R.	Ann Arbor	MI	48104	

US-CL-CURRENT: 600/415; 324/306, 324/309, 600/420

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWC	Draw D
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☐ 17. Document ID: US 6311085 B1

L26: Entry 17 of 20

File: USPT

Oct 30, 2001

US-PAT-NO: 6311085

DOCUMENT-IDENTIFIER: US 6311085 B1

TITLE: Method and apparatus for magnetic resonance arteriography using contrast agents

DATE-ISSUED: October 30, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Meaney; James F. M.	Leeds LS29NS			GB
Prince; Martin R.	Ann Arbor	MI	48104	

US-CL-CURRENT: 600/420; 324/306, 600/415

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMC	Draw. De
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☐ 18. Document ID: US 6230040 B1

L26: Entry 18 of 20

File: USPT

May 8, 2001

US-PAT-NO: 6230040

DOCUMENT-IDENTIFIER: US 6230040 B1

TITLE: Method for performing magnetic resonance angiography with dynamic k-space sampling

DATE-ISSUED: May 8, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wang; Yi	New York	NY		
Lee; Howard M.	Rye	NY		

US-CL-CURRENT: 600/415; 324/309

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMC	Draw. De
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☐ 19. Document ID: US 5928148 A

L26: Entry 19 of 20

File: USPT

Jul 27, 1999

US-PAT-NO: 5928148

DOCUMENT-IDENTIFIER: US 5928148 A

TITLE: Method for performing magnetic resonance angiography over a large field of view using table stepping

DATE-ISSUED: July 27, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wang; Yi	New York	NY		
Lee; Howard M.	Rye	NY		
Khilnani; Neil M.	New York	NY		

US-CL-CURRENT: 600/420; 324/306, 600/415

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	RWC	Draw	Doc
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☐ 20. Document ID: US 5924987 A

L26: Entry 20 of 20

File: USPT

Jul 20, 1999

US-PAT-NO: 5924987

DOCUMENT-IDENTIFIER: US 5924987 A

TITLE: Method and apparatus for magnetic resonance arteriography using contrast agents

DATE-ISSUED: July 20, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Meaney; James F. M.	Leeds LS29NS			GB
Prince; Martin R.	Ann Arbor	MI	48104	

US-CL-CURRENT: 600/420; 324/306, 600/415

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	RWC	Draw	Doc
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Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
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Term	Documents
(25 AND 22).PGPB,USPT,EPAB,JPAB,DWPI,TDBD.	20
(L25 AND L22).PGPB,USPT,EPAB,JPAB,DWPI,TDBD.	20

Display Format:

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File 342:Derwent Patents Citation Indx 1978-04/200431
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Set	Items	Description
S1	24	CT=US 5928148

? map pn

7 Select Statement(s), 78 Search Term(s)
Serial#SD692

1 SearchSaves, 78 Search Term(s)
? s pn=us 5928148
S2 1 PN=US 5928148
? map ic

1 Select Statement(s), 1 Search Term(s)
Serial#SD693

1 SearchSaves, 1 Search Term(s)
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09jun04 07:51:57 User259284 Session D2788.4

SYSTEM:OS - DIALOG OneSearch

File 350:Derwent WPIX 1963-2004/UD,UM &UP=200435
File 348:EUROPEAN PATENTS 1978-2004/Jun W01
File 349:PCT FULLTEXT 1979-2002/UB=20040603,UT=20040527
File 347:JAPIO Nov 1976-2004/Jan(Updated 040506)
File 344:Chinese Patents Abs Aug 1985-2004/May

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S1 12271 Serial: SD693

22 PN=US 6643534 + PN=US 6671536 + PN=US 6707300 + PN=WO
200016267 + PN=WO 200204971 + PN=WO 200262220 + PN=WO
200282996 + PN=WO 200327701 + PN=WO 9846983 + PN=WO
9927382 + PN=WO 9953333

54 S2:S7

S2 54 Serial: SD692

S3 15 S2 AND STEP????/TI,AB,CM
S4 15 S2 AND (STEP OR STEPS OR STEPP????)/TI,AB,CM
S5 12 S2 AND (TABLE OR TABLES OR COUCH??)/TI,AB,CM
S6 2 S2 AND PARTIAL??/TI,AB,CM
S7 15 S2 AND (MOVE???? OR MOVAB???? OR MOVING OR TRANSLAT????)/TI,AB,CM
S8 7 4AND5AND7
S9 10 S4:S7 AND (FOV OR VIEW????(2N) FIELD??)/TI,AB,CM
S10 15 S6 OR S8 OR S9

SYSTEM:OS - DIALOG OneSearch

File 155:MEDLINE(R) 1966-2004/May W5
 File 2:INSPEC 1969-2004/May W5
 File 5:Biosis Previews(R) 1969-2004/May W5
 File 6:NTIS 1964-2004/Jun W1
 File 8:Ei Compendex(R) 1970-2004/May W5
 File 73:EMBASE 1974-2004/May W5
 File 987:TULSA (Petroleum Abs) 1965-2004/Jun W2
 File 94:JICST-EPlus 1985-2004/May W3
 File 35:Dissertation Abs Online 1861-2004/May
 File 144:Pascal 1973-2004/May W5
 File 105:AESIS 1851-2001/Jul
 File 99:Wilson Appl. Sci & Tech Abs 1983-2004/May
 File 58:GeoArchive 1974-2004/Nov
 File 34:SciSearch(R) Cited Ref Sci 1990-2004/May W5
 File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
 File 292:GEOBASE(TM) 1980-2004/May B3
 File 89:GeoRef 1785-2004/Jun B1
 File 65:Inside Conferences 1993-2004/Jun W1
 File 350:Derwent WPIX 1963-2004/UD,UM &UP=200435
 File 347:JAPIO Nov 1976-2004/Jan(Updated 040506)

Set	Items	Description
S1	51728	FOV OR FOVS OR FIELD??(2N)VIEW?????
S2	7756	(MULTIPLE OR DIFFERENT) (W)VIEWS
S3	89	S1:S2 AND (TABLE OR TABLES OR COUCH???) (3N) (STEP OR STEPS - OR STEPP???? OR MOVE?? OR MOVEAB????? OR MOVING OR MOVAB?????- ???)
S4	15	S1:S2 AND (TABLE OR TABLES OR COUCH???) (3N)TRANSLAT???????
S5	7	S1:S2 AND (TABLE OR TABLES OR COUCH???) (3N)FLOAT??????
S6	59	S1:S2 AND (TABLE OR TABLES OR COUCH???) (3N) (POSITION?????? OR LOCATION?????)
S7	38	S3:S6 AND (PARTIAL?? OR RECONSTRUCT????)
S8	21	RD S7 (unique items)
S9	18	S8 AND (IMAGING OR MRI OR NMR OR MR OR MAGNETIC())RESONANCE OR NUCLEAR()MAGNETIC)
S10	204	S1:S2 AND PARTIAL?? AND RECONSTRUCT?????
S11	111	S10 AND (IMAGING OR MRI OR NMR OR MR OR MAGNETIC())RESONANCE OR NUCLEAR()MAGNETIC)
S12	109	S11 NOT S8
S13	56	RD S12 (unique items)
S14	6	S13 AND PATIENT??
S15	1	S13 AND (TABLE OR TABLES OR COUCH??)
S16	5	S13 AND (MOVE?? OR MOVING OR MOVAB????? OR MOVEAB?????)
S17	10	S14:S16

9/9/17 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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004491312
WPI Acc No: 1985-318190/198551
XRPX Acc No: N85-236517

Nuclear **imaging** tomographic scanning system - **moves** patient
support **table** in elliptical path synchronously with motion of
viewing camera in circular orbital path

Patent Assignee: GENERAL ELECTRIC CO (GENE)

Inventor: BARFOD J M

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 164626	A	19851218				198551 B
US 4652758	A	19870324	US 84617301	A	19840604	198714
IL 74915	A	19881230				198906
EP 164626	B	19901031				199044
DE 3580311	G	19901206				199050

Priority Applications (No Type Date): US 84617301 A 19840604

Abstract (Basic): EP 164626 A

The horizontal, X, and vertical, Y, movements of the patient
support table (12) are given by the equations, 1 and 2, where theta is
the projection angle of the camera head in rotation; R is the radius of
rotation of the head; a,b is the respective horizontal vertical
half-axis of the table defining an ellipse. The **table** is
moved by a respective X, Y axis motor on a base (24) which is
movable relative to rods (26).

The assembly of rods, base and **table** is **movable** as a
whole along the longitudinal, Z, axis to bring the patient to a
required position or for free-body scanning. A CPU monitors and
controls the **position** of the **table** and of the camera head
(16).

ADVANTAGE - Enhanced image resolution and contrast are achieved
using minimum patient-detector spacing whilst providing full
field of view.

1/4

Abstract (Equivalent): EP 164626 B

An improved emission tomographic **imaging** apparatus of the
type having a radiation detector which is adapted to revolve along a
circular path around a table supported patient for the purpose of
obtaining **multiple views** of the patient for the
reconstruction of an axial image characterized in. that it
comprises means for **moving** the **table** in two dimensions in
the plane of the radiation detector in motion and in synchrony with the
revolving of the radiation detector such that the distance between the
patient and the radiation detector is minimized. (9pp)

Abstract (Equivalent): US 4652758 A

The camera head of a tomographic apparatus is rotated around the
patient in a circular orbit while the patient-supporting **table** is
synchronously **moved** in a transverse plane to cause the relative
movement of the camera head about the patient to be in an oval or
generally elliptical pattern. In this way, the relatively simple
circular pattern is maintained for the heavy camera while the
accommodating relative movement can be accomplished with a simple
movement of the table.

The camera-to-patient distance is thus maintained close to a
minimum at all positions around the patient. Further, the centre of the
oval, or another point fixed in relation to the patient, will be imaged
on the centre of the detector such that a full **field of**
view will be maintained in all positions around the patient.

(7pp)2

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6/9/2004

10/3,AB,K/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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012151949

WPI Acc No: 1998-568861/199848

Related WPI Acc No: 1998-568417

XRAM Acc No: C98-171078

XRPX Acc No: N98-442527

Rapid positional change of patient during magnetic resonance imaging -
facilitates imaging of blood vessels in series of different views using
single injection of contrast agent

Patent Assignee: BEAUMONT HOSPITAL WILLIAM (BEAU-N)

Inventor: BIS K; SHETTY A N; BIS K G

Number of Countries: 082 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9846983	A1	19981022	WO 98US7342	A	19980410	199848 B
AU 9869679	A	19981111	AU 9869679	A	19980410	199912
US 6493571	B1	20021210	US 9743899	P	19970411	200301

Priority Applications (No Type Date): US 9743899 P 19970411; US 2000486124
A 20000612

Abstract (Basic): WO 9846983 A

A diagnostic procedure uses a magnetic resonance imaging (MRI) device. A patient is laid on a **movable table** and positioned in a first position relative to the MRI machine. The patient is injected with a contrast material. A first scan sequence of a first body portion is performed. The patient is **moved** to a second position relative to the MRI machine. A second scan sequence is performed of a second body portion within a predetermined time corresponding to the travel of the contrast material from the first to the second body portion.

When using an MRI device, the contrast material may be gadopentetate dimeglumine, gadoteridol or gadodiamide. When using a computed tomography machine, the contrast material is omnipaque, renograffin or hypaque. The MRI machine includes a surface coil disposed under the **movable table** and a surface coil disposed over the **table**. The **table** is **movable** relative to the coils. A delay period is provided between the two scanning **steps**. This is long enough to allow a patient to breath between the scans, but is within the length of time it takes for the contrast material to pass from the body portion.

USE - For diagnostic procedures by imaging arteries and veins using either a MRI device or a computed tomography machine.

ADVANTAGE - The patient is **moved** quickly between scanning positions and the scans can be effected using a single injection of contrast agent.

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C/9/2004

...Abstract (Basic): A diagnostic procedure uses a magnetic resonance imaging (MRI) device. A patient is laid on a **movable table** and positioned in a first position relative to the MRI machine. The patient is injected with a contrast material. A first scan sequence of a first body portion is performed. The patient is **moved** to a second position relative to the MRI machine. A second scan sequence is performed of a second body portion within a predetermined time corresponding...

...gadodiamide. When using a computed tomography machine, the contrast material is omnipaque, renograffin or hypaque. The MRI machine includes a surface coil disposed under the **movable table** and a surface coil disposed over the **table**. The **table** is **movable** relative to the coils. A delay period is provided between the two scanning **steps**. This is long enough to allow a patient to breath between the scans, but is within the length of time it takes for the contrast...

10/3,AB,K/9 (Item 4 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
(c) 2004 European Patent Office. All rts. reserv.
01429186

MRI method and apparatus for imaging a **field of view** which is
larger than a homogeneous magnetic field region

PATENT ASSIGNEE:

THE BOARD OF TRUSTEES OF THE LELAND STANFORD JUNIOR UNIVERSITY, (242254),
900 Welch Road, Suite 350, Stanford, CA 94304, (US), (Applicant
designated States: all)

INVENTOR:

Pelc, Norbert Joseph, 490 Distel Drive, Los Altos, CA 94022, (US)
Alley, Marcus Tedrow, 3609 Ramona Circle, Palo Alto, CA 94301, (US)

PATENT (CC, No, Kind, Date): EP 1205760 A2 020515 (Basic)

EP 1205760 A3 031203

APPLICATION (CC, No, Date): EP 2001308329 010928;

PRIORITY (CC, No, Date): US 711065 001109

ABSTRACT EP 1205760 A2

In a magnetic resonance imaging system, an extended **field of view** through an object is realized with a magnet having a smaller homogeneous **field of view** by **translating** the object through the homogeneous field while exciting nuclear spins within the object and detecting MRI signals with a plurality of coils which **translate** through the homogeneous field with the object. In a preferred embodiment, the plurality of receiver coils overlap. The **table** and object can continuously **move** through the homogeneous volume during nuclear excitation and MRI signal detection. A computer adjusts the MRI signals for the effect of changes in **table** position between signal acquisitions and compensate for phase shift in received signals.

...CLAIMS magnetic gradients in the first volume,

- c) RF coils for continually applying pulses to excite nuclear spins in the first volume while an object is **translated** through the first volume,
- d) a **table** for supporting an object,
- e) a plurality of receiver coils, each sensitive to a subvolume of the object, and
- f) means for **translating** the **table** through the first volume for imaging a plurality of subvolumes in the object as the plurality of subvolumes pass through the first volume, the plurality of receiver coils being **translated** with the **table** with each coil detecting MRI signals when in the first volume, and the sum of the subvolumes being larger than the first volume.
2. The apparatus as defined by claim 1 wherein each receiver coil **partially** overlaps at least one other receiver coil.
3. The apparatus as defined by claim 2 wherein the **table** is static during at least one period of nuclear excitation and MRI signal detection.
4. The apparatus as defined by claim 3 and including means for adjusting MRI signals for the effect of changes in **table** position between signal acquisitions.
5. The apparatus as defined by claim 2 wherein the **table** continuously **moves** through the first volume during nuclear excitation and MRI signal detection while multiple sequential repetitions of signal acquisitions are made.
6. The apparatus as defined by claim 5 and further including means for adjusting MRI signals for effects of changes in **table** position between signal acquisitions including phase shift.
7. A method of obtaining MRI signals from an extended **field of view** through an object where the extended **field of view** is larger than the homogenous volume of the magnetic field in a MRI system, the method comprising the **steps** of:
 - a) placing the object to be imaged on a **table** which is **translatable** through the volume of magnetic field,
 - b) providing a plurality of receiver coils, each sensitive to a subvolume of the object, which are **translatable** with the

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- table** whereby MRI signals can be detected by each receiver coil when in the volume of magnetic field,
- c) exciting nuclear spins in the plurality of volumes in the object while the object is **translated** through the volume of magnetic field,
 - d) detecting MRI signals with the plurality of receiver coils, and
 - e) **translating** the body through the volume of magnetic field for imaging a plurality of subvolumes in the object,
8. The method as defined by claim 7 and further including the **steps** of:
- f) adjusting MRI signals for changes in **table** position between signal acquisitions.
9. The method as defined by claim 8 wherein the **table** is static during at least one period of nuclear excitation and MRI signal detection of each sequence repetition.
10. The method as defined by claim...

10/3,AB,K/15 (Item 1 from file: 347)
DIALOG(R) File 347:JAPIO
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06493515
ENDING MR ANGIOGRAPHY METHOD AND DEVICE THEREFOR

PUB. NO.: 2000-079107 A]
PUBLISHED: March 21, 2000 (20000321)
INVENTOR(s): FOO THOMAS KWOK-FAH
HO VINCENT B
BERNSTEIN MATTHEW A
APPLICANT(s): GENERAL ELECTRIC CO (GE)
APPL. NO.: 11-202419 [JP 99202419]
FILED: July 16, 1999 (19990716)
PRIORITY: 118411 [US 98118411], US (United States of America), July 17,
1998 (19980717)

*N/A TAF
6/9/2004*

ABSTRACT

PROBLEM TO BE SOLVED: To provide an ending MR angiography method and a device therefor for the vessels having a long length like artery.

SOLUTION: In the ending MR angiography, in order to supply bolus 54 flowing through a plurality of scanning stations 46, 48, 50 one after another that are spacedly arranged along the vessel, contrast medium is injected into the vein. After obtaining initial **partial** collection of MR data in connection with the determined scanning station, the bolus is traced so as to judge if it reaches the next scanning station. If it reaches, at least a part of MR data in connection with the next scanning station is obtained. However, while a judgement that the bolus does not reach the next scanning station is made, the further data of the determined scanning station is continuously obtained.

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17/9/7 (Item 1 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online
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01831402 ORDER NO: AADAA-I3011678

An investigation of the practical limitations of rapid, phased array
encoded **magnetic resonance imaging**

Author: Bankson, James Andrew

Degree: Ph.D.

Year: 2001

Corporate Source/Institution: Texas A&M University (0803)

Chair: Steven Wright

Source: VOLUME 62/04-B OF DISSERTATION ABSTRACTS INTERNATIONAL.

PAGE 1981. 231 PAGES

Descriptors: ENGINEERING, ELECTRONICS AND ELECTRICAL ; HEALTH SCIENCES,
RADIOLOGY

Descriptor Codes: 0544; 0574

ISBN: 0-493-21715-0

Parallel and **partially** parallel **imaging** techniques have been demonstrated to utilize spatial information inherent in phased array receive coil sensitivities to achieve faster image acquisition. Such strategies can be considered as part of a broad class of alternative **reconstruction** algorithms that seek to minimize the impact of **patient** motion on image quality, which is accomplished in this case by reducing the amount of time that motion that can occur during image acquisition. Additionally, these techniques can allow higher resolution images to be generated in a fixed amount of **imaging** time, or an increase in image refresh rates for real-time **imaging** applications.

A number of different approaches to parallel and **partially** parallel **imaging** have been suggested in recent years, and there has been extensive debate as to the relative merits of each. This work addresses realistic limitations of these techniques through three approaches. First, an existing multi-channel hardware architecture is refined and shown to be useful in increasing the number of array elements supported on virtually any console system to demonstrate that the ultimate limitations are not a function of available receiver hardware. Second, current **partially** parallel algorithms are shown to be equivalent, differing only in the filter scheme chosen to reject the **partially** parallel aliasing function. Finally, it is shown that each of these techniques can only be used for a limited amount of acceleration, depending on image plane depth, desired **field of view**, and the signal-to-noise ratio achieved by the phased array system.

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6/9/2004

17/9/8 (Item 2 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online
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01826604 ORDER NO: AADAA-I3009765

Measuring flow in the right coronary artery with **magnetic resonance imaging**

Author: Salido, Tiffany Beth

Degree: Ph.D.

Year: 2000

Corporate Source/Institution: Wake Forest University, The Bowman Gray
School of Medicine (0249)

Adviser: Craig A. Hamilton

Source: VOLUME 62/03-B OF DISSERTATION ABSTRACTS INTERNATIONAL.

PAGE 1480. 130 PAGES

Descriptors: ENGINEERING, BIOMEDICAL ; HEALTH SCIENCES, RADIOLOGY ;
BIOPHYSICS, MEDICAL

Descriptor Codes: 0541; 0574; 0760

ISBN: 0-493-18761-8

Coronary artery disease is the leading cause of death in the United States. Currently, there is no non-invasive test to diagnose and monitor this disease. Phase contrast **MRI** flow measurements have been verified as a non-invasive means to detect flow abnormalities in the left coronary artery, the site of most coronary stenoses. The goal of this dissertation is to measure flow in the second most common stenosis site, the right coronary artery, with **MRI**. To this end, acquisition, **reconstruction**, and analysis issues are investigated using simulations, phantoms, and volunteers.

Acquisition of right coronary artery flow images must result in a well visualized vessel with accurate flow measurements. To accomplish this, a fast gradient echo pulse sequence with echo train readout is chosen for **imaging**. Recommendations are made for the echo train length, views per segment, bandwidth, number of excitations, phase **field** of **view**, flip angle, coil, velocity encode order, and phase encode order that optimize visualization and accuracy.

Velocity view-sharing, a **reconstruction** technique that doubles the effective temporal resolution of a phase contrast scan, is described and implemented. Through investigation of **reconstruction** segment interpolation schemes, a linear interpolation filter is found to be preferred over a nearest neighbor filter for tagged acquisitions, which gives insight for RCA **imaging**. This may be useful for flow when linear interpolation becomes available for fast gradient echo phase-contrast with echo train readout.

Measurement of oblique vessel flow ideally is the same as non-oblique flow. However, a mismatch between the signal magnitudes of the flowing material and background is shown to create an error in the velocity values. This error cannot be eliminated or corrected for, but minimizing the slice obliquity and thickness will reduce the **partial** volume in the edge pixels and decrease the error.

These investigations allowed flow in the right coronary artery of a **patient** to be imaged. The velocity measurements in this early **patient** are compared to Doppler measurements and the feasibility of the technique is established.

NA TAF
6/9/2004

17/9/9 (Item 3 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online
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1045826 ORDER NO: AAD89-05195
DEVELOPMENT AND CALIBRATION OF MOTION COMPENSATION GRADIENTS IN
MAGNETIC RESONANCE IMAGING AND ITS APPLICATION IN
MAGNETIC RESONANCE ANGIOGRAPHY AND CARDIAC IMAGING
Author: LENZ, GERALD WERNER
Degree: PH.D.
Year: 1988
Corporate Source/Institution: CASE WESTERN RESERVE UNIVERSITY (0042)
ADVISER: E. MARK HAACKE
Source: VOLUME 49/12-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 5478. 365 PAGES
Descriptors: ENGINEERING, MATERIALS SCIENCE
Descriptor Codes: 0794

Spins moving along a magnetic field gradient in **magnetic resonance imaging** lose their phase coherence at the echo time (TE). This leads to signal loss, that can be recaptured with motion compensation gradients.

These rephasing gradients were theoretically derived and simulated assuming constant velocity and acceleration. Several constraints, such as minimum TE, smallest **field-of-view**, and actual gradient behaviour were considered. Due to eddy currents calibration procedures using a flow phantom were devised to ensure optimal rephasing. Calibration was found indispensable for spin echo (SE) sequences with long TEs, whereas good agreement between theoretical predictions and phase measurement was found for gradient field echo (GFE) sequences with short TEs. Phase shifts of **partially** rephasing gradient structures were quantified with a motion phantom. This made it possible to measure pulsatile blood flow time-resolved.

Angiographic-like visualization of blood vessels with a resolution down to 300 μm was obtained. Separation of arteries and veins was achieved with **partially** rephased pulse sequences or with phase image **reconstructions**. Velocity and acceleration compensation was found superior to pure velocity compensation in SE sequences, but significant dephasing in and distal to stenoses was still observed. Velocity compensated GFE sequences with a TE of 7-10 msec overcame this problem, and had better rephasing properties than velocity and acceleration compensated GFE sequences with a TE of 14 msec. Ungated 3D GFE sequences eliminated susceptibility and subtraction artifacts in 2D GFE sequences and combined the advantages of having minimum dephasing and **partial** volume artifacts in 1-2 mm thin slices, no ghosting artifacts, and sufficient contrast-to-noise to extract 3D vascular information.

In cardiac **imaging**, continuous acquisition with motion compensated GFE sequences maintained the steady state. Cardiac and respiratory signals were recorded simultaneously. Retrospective data ordering and interpolation led to optimal resolution and contrast, Cardiac images could be rapidly reviewed in an endless movie loop to assess cardiac function. Significant improvement in contrast and resolution was obtained with additional respiratory ordering compared to simple data averaging.

N/A TAF
6/9/2009